AN ARRANGEMENT OF THE GEOPHILIDÆ, A FAMILY OF CHILOPODA.

By O. F. Cook.

That the genera included in this family present structural characters of great diversity has been known since the publication of Meinert's investigations. That author attempted no subdivision of the family into groups higher than genera, a course to be explained by the fact that the number of genera recognized by him was very small, and by the further consideration that some of the more important structures were misunderstood. Thus the labrum of *Orya* is given as "*bipartitum*," while in reality it is entire, the bipartite appearance resulting from the fact that the part in question is arched when in place, and usually becomes wrinkled in the middle when depressed by a cover glass. The labrum of *Orphnæus* is said by Meinert to be free; in reality it is completely coalesced and closely homologous to that of *Orya*. The labrum of the primitive Chilopoda was, in all probability, tripartite, and the coalescence of the parts with each other and with the frontal lamina are to be viewed as deviations from the ancestral form. Relationships can not, however, be inferred merely from such a fact as coalescence; *Orya* and *Schendyla* have the labrum entire and completely coalesced, and yet represent two very distinct lines of development.

The present method of describing the mandibles has been another source of confusion. As in other Chilopoda the mandibles of Geophilidæ may be supposed to have had originally both pectinate and dentate lamellæ. The compound pectinate lamellæ of *Dicellophilus*,[1] *Orya* and *Himantarium* are evidently the homologues of the laciniate processes of the mandibles of Scolopendridæ and Lithobiidæ, while the mandibles of such genera as *Geophilus* and *Schendyla* have developed differently, the laciniate processes being now represented by a row of simple spines. Thus one of the simple spines of *Geophilus* is to be looked upon as homologue of a whole "pectinate lamella" in *Himantarium*, and the mandibles of the two genera are structurally much wider apart than

[1] A new genus partially equivalent to *Mecistocephalus* of Meinert and recent authors, but not of Newport. According to Meinert, the mandibles of *Mecistocephalus* have only dentate lamellæ, but the reason for this view is not apparent.

could be inferred while the opinion held that the so-called "pectinate lamellæ" in the two cases were structural equivalents.

That the dentate lamellæ have been suppressed in *Dicella* and *Orya* is a case of apparent similarity between genera distinct by nearly all possible characters, and an example of the principle that the presence or suppression of a primitive structure or character is not of itself an evidence either of close affinity or wide divergence.

Since the publication of Meinert's works the number of described genera has greatly increased; likewise the desirability of some arrangement whereby their affinities may be made apparent. Unfortunately, the descriptions of new forms are often very incomplete and omit the most important data, those to be drawn from the mouth parts. Notwithstanding this neglect, it is evident from many specific descriptions that the number of genera yet to be recognized is considerable, and it would seem that a statement of the affinities already manifested will aid in subsequent study.

That a complete arrangement, such as is here proposed, can in the present state of the subject be entirely correct or satisfactory is not to be expected. Cases of uncertain and deficient data are noted in several places. The groups here proposed as families seem to have, by analogy with other classes and with other Chilopoda, ample structural basis for such recognition. The external form and habit are almost identical for the entire group, and the structural differences are not to be explained as correlated with adaptations to localities or hosts, but are rather the accumulated result of variation without the interference of any important principle of selection, a history the more possible because the changes are mostly in the direction of degeneration. From this consideration we may explain the confusing fact that in the different groups there are frequent examples of the preservation of some primitive character which the other members of the family may have lost, and on the other hand there are numerous cases of parallel variation. Of this last the pleural pores are a good example. These may be numerous and distinct, doubtless the primitive condition, and the one which appears in Scolopendridæ; they may be clustered about two or more large cavities in the pleuræ, or they may be entirely wanting. In the genus *Geophilus* the first and second conditions are present, and, if some descriptions are to be trusted, also the third. To suppose that a character which may differ in closely related species can be of use as an evidence of affinity between genera or families would be clearly unreasonable. And yet poriferous foveolæ entirely similar to those of some species of *Geophilus* occur in *Schendyla* and several related genera, in *Ballophilus*, and *Dignathodon*. Thus animals with widely divergent types of labrum, mandibles, and other parts, live in the same localities, have the same habits, and eat the same food with apparently equal success, so that it seems impossible to imagine that special advantages pertain to the different adaptations.

The opinion has recently been advanced that the Geophilidæ and Scolopendridæ should rank as orders,[1] the distinction being based on the number of segments and spiracles. That a merely quantitative difference is sufficient for ordinal distinction may well be doubted. At the same time the recognition of groups of Epimorpha higher than families is desirable and possible, but they can hardly be more than superfamilies. Indeed, it is not easy to suggest a *diagnostic* structural difference between the Scolopendroidæ and Geophiloidæ. The two superfamilies may, however, be defined as follows:

Superfamily SCOLOPENDROIDÆ.

Antennæ with 17–33 joints; eyes present or wanting; basal lamina obsolete; prosternal teeth present or wanting; spiracles 9–19; ventral pores wanting; last pleuræ porose, more or less produced caudad; segments 21–23, constant for genera and species.

Superfamily GEOPHILOIDÆ.

Antennæ with 14 joints; eyes wanting; basal lamina present; prosternal teeth rudimentary or wanting; spiracles present on all pediferous segments except the first and last; ventral pores usually present; last pleuræ not produced, sometimes eporose; segments 31–173, not constant for genera, rarely so for species.

That future study will necessitate the recognition of family types among the Scolopendroidæ is not improbable; the families of Geophiloidæ may be distinguished by the following artificial key:

ANALYTICAL KEY TO THE FAMILIES OF GEOPHILOIDÆ.

A. Ventral pores wanting; suprasentella in five rows; last pleuræ occupying three segments ..... GONIBREGMATIDÆ.
Ventral pores distinct in all cases where suprasentella are present; last pleuræ affecting last segment only ..... B.

B. Basal segment very broad, concealing the pleuræ of the prehensors ..... C.
Basal segment not or scarcely broader than the cephalic lamina, the prehensorial pleuræ evident from above ..... D.

C. Ventral pores in one median central or posterior area ..... E.
Ventral pores in two or more areas, anterior and posterior ..... F.

D. Labrum entire; mandibles with one pectinate and 1–3 dentate lamellæ; ventral pores, if present, in a central area ..... SCHENDYLIDÆ.
Labrum tripartite, mandibles without dentate lamellæ; ventral pores, if present seldom in a central area ..... G.

E. Mandibles with one pectinate lamella; labrum tripartite, the lateral parts greatly reduced or rudimentary ..... DIGNATHODONTIDÆ.
Mandibles with dentate and pectinate lamellæ; labrum entire ..... H.

F. Last pleuræ coxæform, without pores; anal legs unarmed; antennæ attenuate ..... ORYIDÆ.

[1] Silvestri, Orders Oligostigmata and Plantastigmata, Ann. d. Museo Civico di Storia Nat. di Genova, XIV, pp. 623, 634, 1895.

Last pleuræ inflated, porose; anal legs with a distinct claw; antennæ filiform or crassate, not attenuate ..... DISARGIDÆ.

G. Mandibles with one pectinate lamella; labial sternum entire; ventral pores normally present ..... GEOPHILIDÆ.

Mandibles with several pectinate lamellas; labial sternum divided; ventral pores wanting ..... DICELLOPHILIDÆ.

H. Antennæ geniculate, more or less clavate; segments scabrous, dorsally with a transverse depression; ventral pores perforating an elevated chitinous plate lying along the posterior margin of the segments... BALLOPHILIDÆ.

Antennæ attenuate, not geniculate; segments smooth, or nearly so, without transverse furrow; ventral pores in a small central or subcentral depression ..... HIMANTARIIDÆ.

GONIBREGMATIDÆ, new family.

Antennæ filiform; frontal lamina coalesced; cephalic lamina not concealing the prehensors; prebasal lamina obsolete; basal lamina broad; mouth parts unknown; prehensorial sternum very broad; suprascutella present in five rows; ventral pores wanting; last sternum very small; last pleuræ enormously developed, extending along three segments; pores very numerous; anal pores wanting; anal legs carinate, five-jointed, without claw. Pairs of legs, 161.

Genus GONIBREGMATUS, Newport.

Gonibregmatus, NEWPORT, Proc. Zool. Soc. London, CXIX, p. 180, 1842.

Distribution.—Philippine Islands.

Type.—*Gonibregmatus cumingii*, Newport.

The known characters of this genus are so remarkable that others equally interesting are to be expected from an examination of the mouth parts.

ORYIDÆ, new family.

Antennæ attenuate or subfiliform; frontal lamina coalesced or distinct; cephalic lamina concealing the prehensors; prebasal lamina obsolete; basal lamina broad; labrum entirely coalesced; mandibles with several pectinate lamellæ; no dentate lamellæ; labial sternum entire, simple, or provided with processes; labial palpi one-jointed, with or without processes; interior labial palpus distinct; maxillary palpus with claw simple or pectinate; prehensorial sternum very broad; suprascutella present in one or more rows; ventral pores in 1–4 transverse indefinite areas; last sternum broad; the pleuræ not inflated, without pores; anal pores wanting; genital palpi two-jointed; anal legs six-jointed, without claw. Pairs of legs, 67–125.

Genus ORYA, Meinert.

Orya, MEINERT, Nat. Tidsskr. VII, p. 14, 1870.

Type.—*Orya barbarica* (Gervais) Meinert.[1]

Distribution.—North Africa; Spain.

[1] Mag. Zool de Guérin, IX.

Genus ASPIDOPLERES, Porat.

Aspidoleres, PORAT, Bih. t. k. Svenska Vet. Akad. Hand., Afd. IV, No. 7, p. 15, 1893.

Type.—*Aspidopleres intercalatus*, Porat.

Distribution.—Damaraland.

Genus ORPHNÆUS, Meinert.

Orphnæus, MEINERT, Nat. Tidsskr., VII, p. 17, 1870.

Type.—*Orphnæus phosphoreus* (Linnæus).[1]

Distribution.—Tropics of both hemispheres.

Genus NOTIPHILIDES, Latzel.

Notiphilides, LATZEL, Zoologischer Anzeiger, III, No. 68, p. 546, 1880.

Type.—*Notiphilides maximiliani* (Humbert and Saussure).[2]

Distribution.—Mexico.

It may be that *Mesocanthus*, Meinert, should be placed in this family, but though the mandibles are said to have only pectinate lamellæ, it would appear from Meinert's diagram that they are of a character entirely different from those of *Orya* and *Orphnæus*.

Family HIMANTARIIDÆ, new name.

Notiphilidæ, C. L. KOCH, System der Myriapoden, 1847.

Antennæ attenuate; frontal lamina coalesced or distinct; cephalic lamina concealing the prehensors; prebasal lamina obsolete; basal very broad; labrum entire, free; mandibles with one dentate and several pectinate lamellæ; labial sternum entire, simple; labial palpus one-jointed; interior labial process distinct; maxillary sternum entire; claw of maxillary palpus excavate (spoon-shaped), more or less pectinate; prehensorial sternum very broad, with chitinous lines; suprascutella present, in one or more rows, or wanting; ventral pores in one central area; anal pleuræ more or less inflated, with few or many pores; anal pores wanting; genital palpi two-jointed; anal legs six-jointed, without claw. Pairs of legs, 67–173.

Genus HIMANTARIUM, C. L. Koch.

Himantarium, C. L. KOCH, System der Myriapoden, p. 82, 1847.

Type.—*Himantarium gabrielis* (Linnæus).[3]

Distribution.—South Europe; North Africa.

Genus BOTHRIOGASTER, Seliwanoff.

Notiphilus, C. L. KOCH, System der Myriapoden, p. 82, 1847.

Bothriogaster, SELIWANOFF, Zool. Anzeiger, XLIII, p. 620, 1879.

Type.—*Bothriogaster signatus* (Kessler).[4]

Distribution.—Greece to Turkestan.

[1] Syst. Nat., Ed. X, p. 368, 1770.
[2] Revue et Mag. d. Zool., 1870, p. 205.
[3] Syst. Nat., Ed. XII, p. 1063, 1766.
[4] Trudy, Russ. Entom. Obsz., VIII, p. 39. figs. 4, 5.

Notiphilus has not been identified by recent writers, and was considered by Meinert to be a synonym of *Himantarium*.[1] Koch's description is, however, quite extensive and explicit, and offers several characters sufficient to distinguish the genus from *Orya* and *Himantarium*. From *Bothriogaster* it is difficult, if not impossible, to indicate distinctions; indeed there is no evident reason why Seliwanoff's description and figures of *Bothriogaster signatus*, Kessler, do not correspond with Koch's *Notiphilus tæniatus*,[2] as Seliwanoff has himself suggested by placing *Notiphilus tæniatus* as a doubtful synonym of *signatus*. Later on *signatus* was reported from Greece by Dr. Karsch,[3] so that not even a difference in habitat remains. Nevertheless it can hardly be asserted with confidence that the animals are specifically and generically the same, but the agreement in all important characters is so great that a generic difference is exceedingly improbable. The fact that Koch gives the legs as varying from 100 to 154 suggests the possibility that he may have had more than one species under observation. The matter will probably remain more or less in doubt until the Greek Myriapoda are better known, but for our present purpose it is sufficient to point out that *Notiphilus* would be a valid genus, were not the name preoccupied in the Diptera, and that *Bothriogaster* may replace it until the typical species are shown to be distinct, and not congeneric.

Genus STIGMATOGASTER, Latzel.

Stigmatogaster, Latzel, Myr. Oest.-Ung. Mon., I, p. 211, 1880.

Type.—*Stigmatogaster gracilis* (Meinert).[4]

Distribution.—South Europe; North Africa.

Genus STYLOLÆMUS, Karsch.

Stylolæmus, Karsch, Troschel's Archiv f. Naturges., Jahrg. XLVII, Heft. 1, p. 9, figs. 3, 3*a*, 3*b*, 1881.

Type.—*Stylolæmus peripateticus*, Karsch.

Distribution.—Tripoli.

The type and only specimen of this genus is in the Berlin Museum. It is in very poor condition, but does not possess the abnormal characters which might be inferred from the figures cited above. Its affinities are doubtless with the Notiphilidæ, and it does not appear to coincide with any of the genera. In certain of its external characters it suggests *Pectiniunguis*. No examination of the mouth parts was possible.

[1] Meinert has also described a "*Himantarium tæniatum*, new species" (Myr. Mus. Haun., III, p. 149), which of course could not stand if *Notiphilus* is a synonym of *Himantarium*. This is either an oversight or a complete disregard of the principle of priority.

[2] System der Myriapoden. p. 180, 1847; Die Myriapoden, II, p. 59, fig. 181.

[3] Verzeichniss der von Herrn E. v. Oertzen in den Jahren 1884 und 1885 in Griechenland und auf Kreta gesammelten Myriapoden. Berliner Entom. Zeitschr., XXXII, p. 220 (1888).

[4] Naturh. Tidsskr., VII, p. 32, 1879.

Genus CHOMATOBIUS, Humbert and Saussure.

Chomatobius, Humbert and Saussure, Revue et Mag. d. Zool., p. 205, 1870.

Type.—*Chomatobius mexicanus* (Saussure).[1]

Distribution.—Mexico.

DISARGIDÆ, new family.

Antennæ filiform or crassate, not attenuate; frontal lamina distinct (or coalesced?); cephalic lamina concealing the prehensors; prebasal lamina obsolete; basal plate broad; mouth parts unknown; prehensorial sternum very broad; supra-scutella wanting; ventral pores in two areas, a circular anterior and a broad, transverse posterior; anal pleura inflated, with numerous pores; anal pores wanting; genital palpi two-jointed; anal legs five or six jointed, with a claw. Pairs of legs, 59–99.

DISARGUS, new genus.

Type.—*Himantarium* (?) *striatum* (Pocock).[2]

Distribution.—Madras.

Genus HIMANTOSOMA, Pocock.

Himantosoma, Pocock, Ann. d. Mus. Civ. di Genova, 2 ser., X, p. 428, 1891.

Type.—*Himantosoma typicum*, Pocock.

Distribution.—Mergui Archipelago, Burmah.

Besides these genera there are probably two or more others in the oriental region represented by species described by Meinert and Pocock under *Himantarium*, but evidently very little related to *gabrielis*. The characters now known are not sufficient, however, to give much base for an estimate of affinities. The present family has been recognized on account of the unique combination of characters which make affinities with the other families very improbable, though much must depend on the mouth parts.

BALLOPHILIDÆ, new family.

Antennæ geniculate, subclavate; frontal lamina not distinct; cephalic lamina concealing the prehensors; prebasal lamina obsolete; basal very broad; labrum entire, not chitinous; mandibles with one pectinate and one dentate lamella; labial sternum entire, simple; labial palpus two-jointed; interior labial process distinct; maxillary sternum divided; claw of maxillary palpus excavate, the margin pectinate; prehensorial sternum very broad, chitinous lines wanting; suprascutella wanting; ventral pores in an oval posterior area, consisting of a raised, perforated, chitinous plate; anal pleuræ not inflated, with two

[1] Essai d'une Faune d. Myr. d. Mex., p. 132, 1860.

[2] Ann. Mag. Nat. Hist., (6) V, p. 248, pl. XII, fig. 4.

large pores more or less concealed; anal pores present; genital palpi; anal legs strongly crassate, six-jointed, without claw. Pairs of legs, 63–73 (87–91 in *Mesocanthus*).

BALLOPHILUS, new genus.

Type.—*Ballophilus clavicornis*, Cook, new species, in the National Museum collection.

Distribution.—Upper Guinea.

Genus MESOCANTHUS, Meinert.

Mesocanthus, MEINERT, Nat. Tidsskr., VII, p. 34, 1870.

Type.—*Mesocanthus albus*. Meinert.

Distribution.—Tunis.

This genus is assigned to the present family provisionally, and the family description was not arranged to contain it. According to Meinert's description and plates, there is great similarity with *Ballophilus* in the labrum. The mandibles are strikingly different from those of *Orya* and *Orphnæus*, the other forms with several pectinate lamellæ, and the ventral pores are in a single area. Seliwanoff has described a species with pleural pores.

Genus TÆNIOLINUM, Pocock.

Tæniolinum, POCOCK, Journ. Linn. Soc., XXIV, p. 471, 1893.

Type.—*Tæniolinum setosum*, Pocock.

Distribution.—St. Vincent.

SCHENDYLIDÆ, new family.

Antennæ filiform; frontal lamina coalesced; cephalic lamina not concealing the prehensors; prebasal lamina evident or concealed; basal lamina narrow; labrum entire, free or coalesced; mandibles with one pectinate and 1–3 dentate lamellæ; labial sternum entire, simple, or with a process; labial palpus two-jointed, with a process; interior labial process distinct or united with palpus at base; maxillary sternum entire; claw of maxillary palpus simple or pectinate; prehensorial sternum moderately broad; chitinous lines present or wanting; suprascutella wanting; ventral pores in a median area or wanting; anal pleuræ not much inflated, with few or many pores; anal pores wanting; genital palpi entire; anal legs five or six jointed, with or without claw. Pairs of legs, 39–71.

Genus SCHENDYLA, Bergsoe and Meinert.

Schendyla, BERGSOE and MEINERT, Naturh. Tidsskr., IV, p. 103, 1866.

Type.—*Schendyla nemorensis* (C. L. Koch).[1]

Distribution.—Europe; North Africa; Eastern North America.

[1] Deutschl. Crust. u. Myr., Hft. 9, t. 4, 1837.

Genus PECTINIUNGUIS, Bollman.

Pectiniunguis, Bollman, Proc. U. S. Nat. Mus., XII, p. 212, 1889.

Type.—*Pectiniunguis americanus*, Bollman.

Distribution.—Lower California.

Genus ESCARYUS, Cook and Collins.

Escaryus, Cook and Collins, Proc. U. S. Nat. Mus., XIII, p. 391, 1890.

Type.—*Escaryus phyllophilus*, Cook and Collins.

Distribution.—Central New York.

Genus NANNOPHILUS, new name.

Nannopus (Bollman), Cook and Collins, Proc. U. S. Nat. Mus., XIII, p. 389, 1890.

Type.—*Nannophilus eximius* (Meinert).[1]

Distribution.—North Africa.

CTENOPHILUS, new genus.

Type.—*Ctenophilus africanus*, new species, Cook, in the National Museum collection.

Distribution.—Liberia.

DIGNATHODONTIDÆ, new family.

Antennæ filiform or subclavate; frontal lamina distinct or coalesced; cephalic lamina concealing the prehensors; prebasal lamina present or obsolete; basal lamina broad; labrum tripartite, the lateral parts greatly reduced; mandibles with a single pectinate lamella; labial sternum deeply bilobed, simple; labial palpus one-jointed, simple; interior labial process present or obsolete; maxillary sternum entire; claw of maxillary palpus rudimentary; prehensorial sternum not broad; chitinous lines present; suprascutella wanting; ventral pores in a median area or wanting; anal pleurae not greatly enlarged, pores few or many; anal pores present or wanting; genital palpi simple, or two-jointed. Pairs of legs, 55–154.

Genus DIGNATHODON, Meinert.

Dignathodon, Meinert, Naturh. Tidsskr., VII, p. 36, tab. 2, figs. 13–22, 1870.

Type.—*Dignathodon microcephalum* (Lucas).[2]

Distribution.—South Europe: North Africa.

Genus HENIA, C. L. Koch.

Henia, C. L. Koch, System der Myriap., p. 83, 1847.

Type.—*Henia devia*, C. L. Koch.

Distribution.—Greece.

The genus *Scotophilus*, Meinert, was described without reference to *Henia*. Pocock has pointed out that the two genera are the same, and

[1] Naturh. Tidsskr., VII, p. 57, 1870.

[2] Explor. Scient. d. l'Algérie, p. 349, pl. II, fig. 10.

that *Scotophilus* is preoccupied. Bollman has proposed the generic name *Meinertia* to take the place of *Scotophilus*, but this can not be used unless *deria*, the type of *Henia*, and *bicarinatus*, the type of *Scotophilus*, prove not to be congeneric. This is not impossible, for Koch's species is credited with 154 pairs of legs, while *bicarinatus* has only about half as many.

Genus CHÆTECHELYNE, Meinert.

Chætechelyne, MEINERT, Naturh. Tidsskr., VII, p. 44, 1870.

Type.—Chætechelyne vesuviana (Newport).[1]

Distribution.—South Europe; North Africa.

Family GEOPHILIDÆ, Leach.

Geophilidæ, LEACH, Trans. Linn. Soc. London, XI, pt. II, p. 384, 1814.

Antennæ filiform; frontal lamina distinct or coalesced; cephalic lamina not concealing the prehensors; prebasal lamina present or obsolete; basal lamina narrow; labrum tripartite. Mandibles with a single pectinate lamella; labial sternum entire or bifid, simple or with a process; labial palpus two-jointed, simple, or with a process; interior labial process usually distinct; maxillary sternum entire or divided; claw of maxillary palpus not excavate or pectinate; prehensorial sternum narrow, chitinous lines present or wanting; suprascutella wanting; ventral pores on posterior half of segments, not in a definite area; anal pleuræ more or less inflated, pores few or many; anal pores present or wanting; genital palpi two-jointed. Pairs of legs, 31–109.

Genus GEOPHILUS, Leach.

Geophilus, LEACH, Trans. Linn. Soc. London, XI, pt. II, p. 384, 1814.

Type.—Geophilus carpophagus, Leach.

Distribution.—Europe; North Africa.

Genus MECISTOCEPHALUS, Newport.

Mecistocephalus, NEWPORT, Proc. Zool. Soc. London, p. 178, 1842.

Type.—Mecistocephalus attenuatus (Say).[2]

Distribution.—Eastern North America; Europe; North Africa.

Genus ORINOPHILUS, new name.

Orinomus, ATTEMS, Sitzungsb. d. Kais. Akad. d. Wissens. Wien, CIV, p. 166, 1895.

Type.—Orinophilus oligopus (Attems).[3]

Distribution.—Austria.

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[1] Trans. Linn. Soc., XIX, p. 435.

[2] Journ. Acad. Nat. Sci. Phila., II, p. 114.

[3] Sitzungsber. K. Akad. Wiss. Wien, CIV, p. 167, pl. 1, fig. 11.

SCHIZOTÆNIA, new genus.

Type.—Schizotænia prognatha, new species, in the National Museum collection.

Distribution.—Liberia.

PIESTOPHILUS, new genus.

Type.—Piestophilus tenuitarsis (Pocock).[1]

Distribution.—Dominica.

Genus LINOTÆNIA, C. L. Koch.

Linotænia, C. L. Koch, System der Myriapoden, p. 86, 1847.

Type.—Linotænia crassipes (C. L. Koch).[2]

Distribution.—Europe.

Genus TOMOTÆNIA, Cook.

Tomotænia, Cook, American Naturalist, XXIX, p. 866, 1895.

Type.—Tomotænia parviceps (Wood).[3]

Distribution.—California.

Genus AGATHOTHUS, Bollman.

Agathothus, Bollman, Bull. 46, U. S. Nat. Mus., p. 166, 1893.

Type.—Agathothus graeilis (Bollman).[4]

Distribution.—Tennessee.

Of the affinities of this genus little can be asserted. It is placed here mostly because Bollman originally described the species as a *Scolioplanes*.

Family DICELLOPHILIDÆ, Cook.

Dicellophilidæ, Cook, Proc. U. S. Nat. Mus., XVIII, p. 61, 1895.

Antennæ filiform or subattenuate; frontal lamina always distinct; cephalic lamina narrow, not concealing the prehensors; prebasal lamina obsolete; basal lamina very narrow; labrum tripartite, entirely free; mandibles with several pectinate lamellæ; labial sternum divided, simple; labial palpus and interior labial process similar in shape, distinct, apically spatulate; maxillary sternum entire; maxillary palpus slender; claw simple; prehensorial sternum very narrow, without chitinous lines; suprascutella wanting; ventral pores wanting; anal pleuræ inflated, with numerous pores; anal pores present; genital palpi usually two-jointed; anal legs slender, six-jointed, without claw. Pairs of legs constant for each species; in the different species, 43–101.

[1] Ann. and Mag. Nat. Hist., 6 ser., II, No. 12, p. 472, 1888.

[2] Deutschl. Crust. und Myriap., Pt. 3, tab. 3, 1835.

[3] Journ. Acad. Nat. Sci. Phila., V, p. 49, 1863.

[4] Ann. N. Y. Acad. Sci., p. 110, 1887.

Genus DICELLOPHILUS, Cook.

Dicellophilus, Cook, Proc. U. S. Nat. Mus., XVIII, p. 61, 1895.

Type.—*Dicellophilus limatus* (Wood).[1]

Distribution.—California.

Genus LAMNONYX, Cook.

Lamnonyx, Cook, Proc. U. S. Nat. Mus., XVIII, p. 61, 1895.

Type.—*Lamnonyx leonensis*, Cook.

Distribution.—Sierra Leone.

Genus MEGETHMUS, Cook.

Megethmus, Cook, Proc. U. S. Nat. Mus., XVIII, p. 61, 1895.

Type.—*Megethmus microporus* (Haase).[2]

Distribution.—Philippine Islands.

GENERA NOT NOW RECOGNIZED AS VALID.

ARTHRONOMALUS, Newport.

Type.—*Arthronomalus longicornis* (Leach) = Geophilus longicornis, Leach.

CLINOPODES, C. L. Koch.

Type.—*Clinopodes flavidus*, C. L. Koch = Geophilus flavidus (C. L. Koch).

GEOPHILUS, Newport (not Leach).

Type.—*Geophilus acuminatus*, Leach = Linotænia acuminata (Leach).

MECISTOCEPHALUS, Meinert (not Newport).

Type.—*Mecistocephalus carniolensis* (C. L. Koch) = Lamnonyx carniolensis (C. L. Koch).

MEINERTIA, Bollman = SCOTOPHILUS, Meinert.

NECROPHLŒOPHAGUS, Newport.

Type.—*Necrophlœophagus longicornis* (Leach) = Geophilus longicornis, Leach.

NOTIPHILUS, C. L. Koch.

Type.—*Notiphilus tæniatus*, C. L. Koch = Bothriogaster tæniatus (C. L. Koch).

PACHYMERIUM, C. L. Koch.

Type.—*Pachymerium ferrugineum* (C. L. Koch) = Mecistocephalus attenuatus (Say).

POABIUS, C. L. Koch.

Type.—*Poabius niteus*, C. L. Koch = Geophilus flavidus (C. L. Koch).

[1] Journ. Acad. Nat. Sci. Phila., V, p. 42, 1863.

[2] Abh. u. Ber. d. K. Zool. u. Anth.-Ethn. Mus., Dresden, 1886-87, No. 5, p. 106.

POLYCRICUS, Saussure and Humbert.

Described as a subgenus of *Geophilus*.

SCNIPÆUS, Bergsoe and Meinert.

Type.—*Scnipæus foveolatus*, Bergsoe and Meinert = Geophilus foveolatus (Bergsoe and Meinert).

SCOLIOPLANES, Bergsoe and Meinert.

Type.—*Scolioplanes maritimus* (Leach) = Linotænia maritima (Leach).

SCOTOPHILUS, Meinert.

Type.—*Scotophilus bicarinatus*, Meinert = Henia bicarinata (Meinert).

STENOTÆNIA, C. L. Koch.

Type.—*Stenotænia linearis*, C. L. Koch = Geophilus linearis (C. L. Koch).

STRIGAMIA, Gray = GEOPHILUS, Leach.

STRIGAMIA, Wood.

Type.—*Strigamia acuminatus* (Leach) = Linotænia acuminata (Leach).

STRIGAMIA, Selivanoff.

Type.—*Strigamia parviceps*, Wood = Tomotænia parviceps (Wood).